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QE *Pro* Raman+ Spectrometer

Detect Weak, Elusive Raman Signatures Faster

The QE *Pro* Raman+ is a high-sensitivity, 785 nm Raman spectrometer providing low limits of detection for trace level materials identification from 150 cm^{-1} to 3000 cm^{-1}. Optical advancements have unlocked 3x sensitivity improvement and expanded spectral coverage compared with previous QE *Pro* Raman spectrometers. The ability to distinguish sharp peaks from weak Raman spectral signatures makes QE *Pro* Raman+ an excellent choice for analysis of chemicals, pharmaceuticals, illicit drugs, pesticides and organic materials.

ASK APPLIED SPECTRAL KNOWLEDGE

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At a Glance

Raman shift: 150 cm^{-1} to 3000 cm^{-1}
Excitation wavelength: 785 nm
Optical resolution: 0.71 nm (FWHM)
Signal-to-noise ratio: 1000:1 (single acquisition)
Dynamic range: ~85,000:1
Integration time: 8 ms-3600 s
Input fiber connector: SMA 905
Communication: USB 2.0, 480 Mbps (USB 1.1 compatible); RS-232 (5-wire)
Dimensions: 182 mm x 110 mm x 47 mm; 7.17 in. x 4.33 in. x 1.85 in.
Weight: 1.15 kg (2.6 lb.); power supply, 0.45 kg (1 lb.)

* A QE *Pro*-Raman+ configured with a standard Raman probe has a Raman shift of 150 cm^{-1} to 3000 cm^{-1}. The spectrometer alone is tuned from 0 cm^{-1} to 3000 cm^{-1}.

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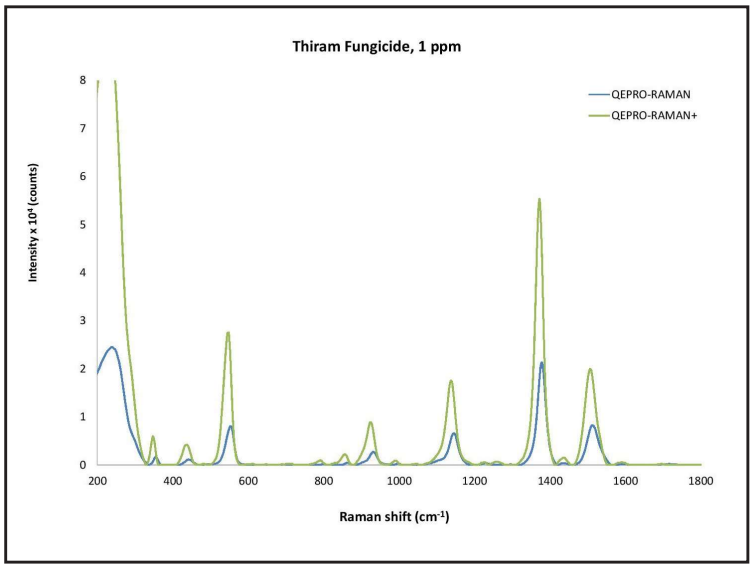
QE *Pro* Raman+ Setups

The QE *Pro* Raman+ can be used with Raman lasers, probes, SERS substrates and sample holders as a complete system.

Advantages of Modular QE *Pro* Raman+ Setups

- Detect weaker, elusive Raman signatures
- 3x sensitivity improvement enables faster measurements
- "See" more over a wider Raman shift range (150 cm^{-1} to 3000 cm^{-1})
- Low noise electronics and detector cooling push limits of detection even lower



The sensitivity improvement with QE Pro-Raman+ is evident in these measurements of the fungicide thiram. The use of SERS nanoparticles also contributes to system sensitivity.

Example Applications

QE *Pro* Raman+ is an excellent choice for challenging applications across research and industry:

- Materials analysis of chemicals, pharmaceuticals, and food and beverages
- Trace level detection of illicit drugs and explosives
- Concentration level analysis, in combination with Ocean Intelligence machine learning
- Industrial process monitoring
- Pesticide detection with surface enhanced Raman spectroscopy (SERS)